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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,233	06/08/2001	Alfred Ludwig Heinz	APV30268C	6197

7590 11/01/2004

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EXAMINER

MORILLO, JANEL COMBS

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/876,233

Applicant(s)

HEINZ ET AL.

Examiner

Janelle Combs-Morillo

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 24-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 37-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-23, 37, and 39-47 are rejected under 35 U.S.C. 103(a) as obvious over *ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials* (ASM Vol. 2) alone or with *ASM Handbook: Vol. 9 Metallography and Microstructures* (ASM Vol. 9).

Aluminum Association alloys 2024 and 2124 entirely overlap the presently claimed alloy composition (see ASM Vol. 2 page 70 and 74 and Table below). ASM Vol. 2 teaches that 2024 and 2124 typically exhibits YS values within the presently claimed limits (see Table below).

	present invention	2024	2124
	claims 1 and 39		
Cu	3.8-4.9	3.8-4.9	3.8-4.9
Mg	1.2-1.8	1.2-1.8	1.2-1.8
Mn	0.1-0.9	0.3-0.9	0.3-0.9
Fe	0.12 max.	0.50 max.	0.30 max.
Si	0.1 max.	0.50 max.	0.20 max.
Ti	0.15 max.	0.15 max.	0.15 max.
Zn	0.20 max.	0.25 max.	0.25 max.
Cr	0.10 max.	0.10 max.	0.10 max.
impurities ea	0.05 max.	0.05 max.	0.05 max.
impurities total	0.15 max.	0.15 max.	0.15 max.
YS (L)	≥ 300 Mpa	490 Mpa (T861) 345 Mpa (T3)	440 Mpa (T851)
YS (LT)	≥ 270 Mpa	not given	435 Mpa (T851)
K _{C(ao)}	100 Mpa*m ^{0.5}	not given	not given

Concerning the $K_{c(a0)}$ and YS (LT) and optionally grain size, the examiner asserts where the claimed and prior art products are identical or substantially identical in structure or composition, or have been process in an identical or substantially identical process, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

Therefore, if the prior art teaches an identical chemical structure, together with substantially the same hot rolling and/or cold rolling and heat treatment to a given temper (see both ASM Vol 2 and Vol 9 for typical working and heat treatment tempers of AA2024 and AA2124), then the properties applicant discloses (such as $K_{c(a0)}$, YS (LT), grain size, aspect ratio) and/or claims are expected to be present. ASM Vol 9 is relied on as a teaching reference of typical wrought processes used to create the wrought sheet and plate mentioned by ASM Vol 2.

It is held that ASM Vol 2, optionally combined with ASM Vol 9 as a teaching reference, has created a prima facie case of obviousness of the presently claimed invention because the ASM Vol 2 teaches a substantially identical alloy composition processed in substantially similar working and heat treatment steps as mentioned in the instant specification, and one of ordinary skill in the art would expect the same characteristics (including $K_{c(a0)}$, YS (LT), and grain size) to be present in the prior art alloys as in the presently claimed alloy.

Concerning dependent claims 2-5 and 42, the examiner asserts that AA2024 and AA2124 overlap the presently claimed composition ranges.

Concerning dependent claims 6-10, 43, and 44, which are drawn to mechanical characteristics (see Table below) of said alloy, the ASM Vol 2 teaches that 2024 and 2124

Art Unit: 1742

overlap the presently claimed YS and TS. One of ordinary skill in the art would expect the same properties to be present for the presently claimed alloy composition, as in the prior art compositions processed by said substantially similar working and heat treatment to an identical temper. The same argument applies to claims 11-13, which mention the grain aspect ratio.

Concerning dependent claims 14, 15, and 37, the examiner asserts that ASM Vol 2 teaches that 2024 and 2124 are typically plate and sheet (Table 25, etc.) stock used for aircraft structures (page 70 and 74, under "Applications").

Concerning dependent claims 16, 21, and 47, as stated in the arguments above, if the prior art teaches an identical chemical structure, together with substantially the same hot rolling and/or cold rolling and heat treatment to a given temper (see both ASM Vol 2 and Vol 9 for typical working and heat treatment tempers of AA2024 and AA2124), then the properties applicant discloses (such as grain size) and/or claims are expected to be present.

Concerning claims 17-20, 45, and 46, which are drawn to the elongation to fracture in the L or T directions, the ASM Handbook Vol 2 teaches 2024T3 obtains an elongation (L direction)=17%, which falls within the presently claimed values. The ASM Handbook Vol 2 does not teach the elongation in the T direction, however, one of ordinary skill in the art would expect the same properties to be present for the presently claimed alloy composition, as in the prior art compositions, because of the substantial overlap in alloying ranges (see also discussion above).

	present invention						2024	2124
	claim 1 and 39	6	7	8	9	10		
YS (L)	>= 300 Mpa	>= 360 Mpa			>= 360 Mpa	>= 360 Mpa	490 Mpa (T861) 345 Mpa (T3)	440 Mpa (T851)
YS (LT)	>= 270 Mpa	>= 300 Mpa			>= 300 Mpa	>= 300 Mpa	not given	435 Mpa (T851)
TS (L)			>= 475 Mpa					
TS (LT)			>= 440 Mpa					

Art Unit: 1742

K _{C(ao)}	100 Mpa*m ^{0.5}			105 Mpa*m ^{0.5}	170 Mpa*m ^{0.5}	175 Mpa*m ^{0.5}	not given	not given
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Concerning dependent claims 22 and 23, the examiner asserts that AA2024 is typically clad with a higher purity, more corrosion resistant alloy such as AA1230 (see ASM Vol 2, page 70, Chemical Composition of Alclad 2024).

3. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over *ASM Handbook: Vol. 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials* (ASM Vol 2) alone or with *ASM Handbook: Vol. 9 Metallography and Microstructures* (ASM Vol 9), as applied to claim 1 above.

With regard to the process steps of claim 38, as stated above, the prior art teaches substantially similar process of hot and cold working to form a sheet or plate, followed by solution heat treating and aging to a given temper. The prior art does not mention cold rolling in both the length and the width directions. However, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524). Applicant has not clearly shown that cold rolling in both the length and the width directions, which is not mentioned by the prior art, produces a materially different product as compared to the prior art product by process. Therefore, it is held that the 2024 or 2124 alloy product taught by ASM Vol 2 (alternatively in view of ASM Vol 9) has created a prima facie case of obviousness of the presently claimed invention.

Response to Arguments

4. In the response filed on July 9, 2004, applicant submitted a 1.132 Declaration and various arguments traversing the rejections of record.

5. The declaration filed under 37 CFR 1.132 filed July 9, 2004 is insufficient to overcome the rejection of claims 1-23 and 37-47 based upon ASM Vol 2 optionally combined with ASM Vol 9 as set forth in the last Office action because: even though the micrographs of ASM Vol. 9 were interpreted by applicant as not having a visible/detectable grain size, applicant has not clearly shown that the prior art's teaching of an identical alloy composition processed in a substantially similar method as in the instant specification, does not produce a product with substantially the same microstructure and mechanical properties as presently claimed.

Graph 1 in the declaration shows that the prior art alloy of 2024-T351 (which applicant extrapolates to 2124-T851 in points 12-14 of the declaration) has lower tear strength/Rp as compared to the instant alloy in an identical temper. However, this evidence of unexpected results is not commensurate in scope with the presently claimed invention (it is not clear that the prior art alloy of 2024-T351 would not meet the instant claim fracture toughness value) (see MPEP 716.02 d).

Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range. *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980).

Additionally, though the examiner agrees that the fracture toughness in a T851 temper is expected to be lower than the fracture toughness in a T351 temper (item 12 and 14 of declaration), it is unclear on what basis applicant extrapolates the fracture toughness of 2124 to be similar to 2024 when both are in an identical temper T851 or T8 (item 13 of the declaration).

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-23 and 37-47 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 and 28-30,33,35-42 of copending Application No. 10/195483. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of copending Application No. 10/195483 are drawn to an identical alloy composition, which entirely overlap the presently claimed alloy composition.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1742

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GEORGE WYSZOMIERSKI
PRIMARY EXAMINER



JCM
October 25, 2004